

## CLAIMS

1. A mobile station apparatus comprising:

a plurality of antennas that receives both a signal transmitted from a first base station and another signal transmitted from a second base station of an adjacent cell that is adjacent to a cell of the first base station;

a selecting section that selects an antenna that causes lowest interference in the adjacent cell from among the plurality of antennas; and

a transmission section that transmits a signal to the first base station from the selected antenna.

2. The mobile station apparatus according to claim 1, wherein the selecting section selects the antenna that causes the lowest interference in the adjacent cell from among the plurality of antennas that the mobile station has when a distance between the mobile station and the first base station is more than or equal to a threshold.

3. The mobile station apparatus according to claim 1, further comprising:

a measuring section that measures reception power of the signal transmitted from the first base station for each of the plurality of antennas that the mobile station has; and

a determining section that, for each of the plurality of antennas that the mobile station has, determines a usable modulation coding scheme from a plurality of beforehand prepared modulation coding schemes in

accordance with the measured reception power,

wherein the selecting section selects the antenna that causes the lowest interference in the adjacent cell from among the plurality of antennas that the mobile station has when the usable modulation coding schemes are the same in the plurality of antennas that the mobile station has.

4. The mobile station apparatus according to claim 1, further comprising:

10 a measuring section that measures reception power of the signal transmitted from the second base station for each of the plurality of antennas that the mobile station has,

wherein as the antenna that causes the lowest interference in the adjacent cell, the selecting section selects an antenna with the lowest reception power measured in the measuring section from among the plurality of antennas that the mobile station has.

5. The mobile station apparatus according to claim 1, further comprising:

20 a measuring section that measures reception power of signals transmitted from a plurality of antennas that the second base station has, for each of the plurality of antennas that the mobile station has and for each of a plurality of antennas that the second base station has; and

a combining section that combines the measured

reception power for each of the plurality of antennas that the mobile station has to obtain combined reception power,

wherein as the antenna that causes the lowest  
5 interference in the adjacent cell, the selecting section selects an antenna with the lowest combined reception power from among the plurality of antennas that the mobile station has.

6. The mobile station apparatus according to claim 1,  
10 further comprising:

a first measuring section that measures reception power of the signal transmitted from the first base station for each of the plurality of antennas that the mobile station has; and

15 a second measuring section that measures reception power of the signal transmitted from the second base station for each of the plurality of antennas that the mobile station has; and

a calculating section that calculates a ratio of  
20 the reception power measured in the second measuring section to the reception power measured in the first measuring section for each of the plurality of antennas that the mobile station has,

wherein as the antenna that causes the lowest  
25 interference in the adjacent cell, the selecting section selects an antenna with the smallest ratio calculated in the calculating section from among the plurality of

antennas that the mobile station has.

7. The mobile station apparatus according to claim 1, further comprising:

5 a first measuring section that measures reception power of signals transmitted from a plurality of antennas that the first base station has, for each of the plurality of antennas that the mobile station has and for each of a plurality of antennas that the first base station has;

10 a second measuring section that measures reception power of signals transmitted from a plurality of antennas that the second base station has, for each of the plurality of antennas that the mobile station has and for each of a plurality of antennas that the second base station has;

15 a combining section that combines the reception power measured in the first measuring section and the reception power measured in the second measuring section for each of the plurality of antennas that the mobile station has and for each base station to obtain combined reception power; and

20 a calculating section that calculates a ratio of the combined reception power on the second base station to the combined reception power on the first base station for each of the plurality of antennas that the mobile station has,

25 wherein as the antenna that causes the lowest interference in the adjacent cell, the selecting section selects an antenna with the smallest ratio calculated

in the calculating section from among the plurality of antennas that the mobile station has.

8. A method of selecting a transmission antenna in a mobile station apparatus having a plurality of antennas,  
5 wherein an antenna that causes lowest interference in an adjacent cell is selected from among the plurality of antennas as a transmission antenna, the adjacent cell is adjacent to a cell of a base station to which the mobile station apparatus transmits a signal.